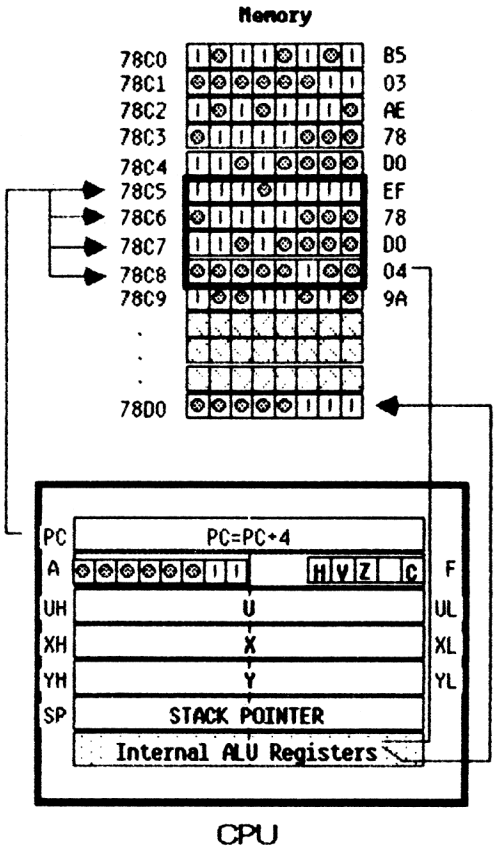
MACHINE LANGUAGE PROGRAMMING

A TUTORIAL FOR

PC-1500 & PC-2 OWNERS



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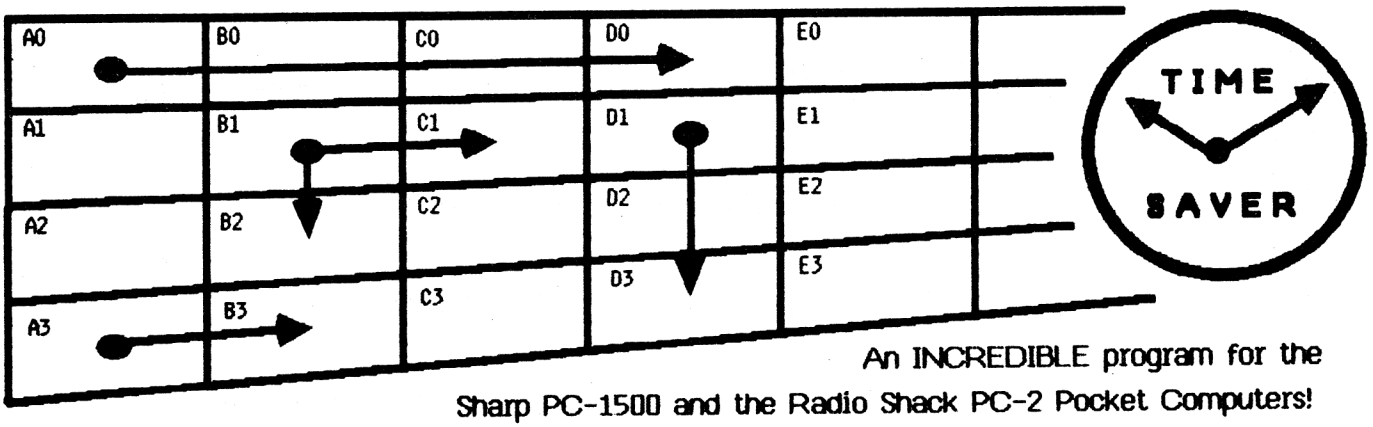


An INCREDIBLE program for the

Sharp PC-1500 and the Radio Shack PC-2 Pocket Computers!

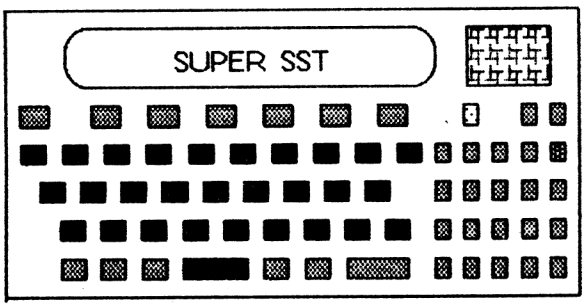
SPREADSHEET POWER IN A POCKET COMPUTER!

SUPER SST is an exciting new program that sets a high standard of excellence in software performance for pocket computers. Critical sections of this outstanding program were implemented using machine language to effect a 30 to 40 fold increase in speed over that achievable using BASIC alone. The use of this technique yields previously unheard of operating speeds in a pocket computer. For instance, a typical "benchmark" spreadsheet containing 140 cells can now be processed in approximately 11 seconds. That means you can do several dozen "what-if" projections in less than five minutes on a pocket computer!

The program enables you to work with your pocket computer as though it were a window onto a sheet of paper. You can place data values and mathematical expressions in any of 140 cells. An expression in one cell can reference the value in another cell. For instance, an expression in the cell at coordinate A3 might specify the sum of the values in the cells at coordinates A1 and A2. You can use the mathematical operators +, -, *, / and a special summation directive. A single cell can have up to 16 characters in an expression. You can use several cells to define an unusually long expression.

For example, suppose you placed the value 4 in the cell at coordinate A1 and the value 3 at cell coordinate A2. You could then put an expression in a cell, say, at coordinate A3, that used the values at A1 and A2. The expression might be A1+A2 or A1*A2 or (A1-A2)*5. The beauty of the program is that anytime you want that expression solved, you just tell your pocket computer!

Now, while the above little three cell example would hardly strain your mental capabilities, consider the situation if you had 100 or more cells containing expressions and they all referenced values in other cells? That is precisely what one typically has when working with financial cash flow projections, analyzing scientific data, performing engineering calculations and a host of other tasks routinely performed by professionals, business people, students and educators. *SUPER SST* analyzes such a situation in a matter of seconds. The speed and accuracy at which this can be done on a pocket computer is truly liberating!



SUPER SST is super easy to use. You just select the coordinate at which you want to enter data or a formula and input the information. You can go down columns or across rows to speed the entry process. There is built-in editing capability. Input corrections can be made on the spot. You can change the contents of any cell(s) whenever you desire. When you want to see results, just select the output mode. The program will recalculate all the active cells at your command. You can view results on the screen of your pocket computer, conveniently (and quickly) scrolling to any cell(s) of interest. When you want to save a hardcopy, you just select output to your printer. You can have any part (or all) of a spreadsheet neatly printed in a format that is easy to read and store. Oh, yes, you may even specify row and column labels as well as title a spreadsheet. Of course, you are also provided with the capability to save all of the information on a spreadsheet to a tape cassette for later recall and updating, if desired. It is all there, built into this complete program, ready to increase your productivity by unimaginable amounts and completely portable. The age of the truly practical pocket computer has arrived!

SUPER SST

POCKET SPREADSHEET PROGRAM

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A Loader*/Monitor/Disassembler Package for the Sharp PC-1500 and the Radio Shack PC-2

professionally crafted by: *Norlin Rober*

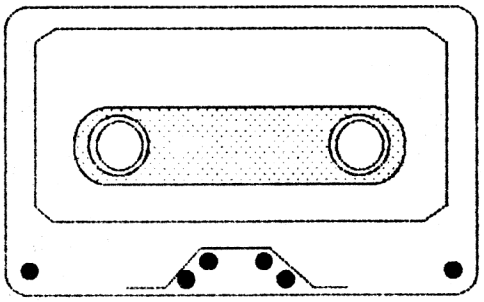
A MASTER CRAFSTMAN SCULPTS A MARVELOUS TOOL!

Norlin Rober, who is internationally recognized as an authority on machine language programming the Sharp PC-1500 and Radio Shack PC-2 pocket computers, has come up with what may well be the ultimate PC-resident tool for users of these popular machines who wish to program in machine language.

It is a *combined* Loader (that is capable of assembling labeled machine code into ready-to-run format), Monitor (for easily examining and controlling the operation of machine language routines), and Disassembler (that converts machine codes into easily read mnemonics so that instruction sequences in RAM and ROM may be studied in detail).

What is more, this entire fantastic package resides in less than 4K of memory so that, in a 10K system (required for operation), the user can have over *6K of combined machine language and BASIC programs!* Yes, now you can easily put together "hybrid" packages that utilize a combination of BASIC and machine language routines.

Supplied on ready-to-load cassette!



Operation is Simple

Norlin has made this package a cinch for novice or expert alike to operate. All of the fundamental commands may be executed from the keyboard using user-defined keys. Once a desired function has been selected, the program automatically prompts you for any information necessary to complete initiating the action. Just look at the built-in commands that can be invoked using the "defined" keys:

DEF C Convert to hexadecinal equivalent.
DEF V View contents of memory.
DEF H Hunt through memory for specified byte.
DEF S Store code into memory.
DEF D Disassemble code into mnemonics.
DEF L List codes or mnemonics using printer.
DEF J Jump to ML program.
DEF M Move block of memory.
DEF B Breakpoint set in user's ML program.
DEF F Fix ML program after breakpoint error.
DEF A Assemble source code into object code.
DEF X Exit from View, Store or Disassembler.

Additional directives allow you to easily save source code, object code and BASIC routines to and from cassette tape as well as obtain listings of source code and any BASIC directives.

Labeling Machine Code

The loader program provided as part of this package allows the machine language programmer to use labels to identify addresses and to utilize these labels in jumps, branches, calls and certain classes of data instructions. This unique technique greatly simplifies the preparation of address-dependent object code. It is no longer necessary to actually count the number of bytes between a branch instruction and a transfer address. Data locations can be specified using labels. Program modifications are thus easy to implement.

Complete and Ready-To-Use

The LMD package is provided complete and ready to be put to work. You receive a tape containing the combination Loader/Monitor/Disassembler ready to be loaded into your Sharp PC-1500 or Radio Shack PC-2. Comprehensive operating instructions are also included.

Equipment Needed

You need a Sharp PC-1500 or Radio Shack PC-2 pocket computer with an 8K RAM module such as a CE-155. (*Note: this program will not work with a battery-backed ROM/RAM such as the CE-159.)* In order to load the program into memory from the supplied tape, you will need to have the use of a tape cassette interface. And, to make maximum use of the LMD's capabilities, you will want to have a printer (such as the CE-150 or equivalent.) Once the program is loaded, it may be used in many situations without having the printer connected.

How to Order

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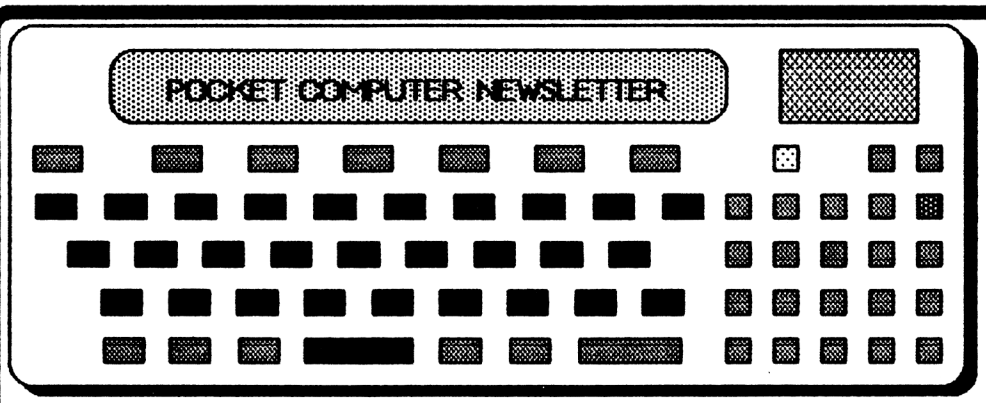

Sharp PC-1500 & Radio Shack PC-2

A Newsletter for Pocket Computer Fans!

This is a timely, compact, easy reading publication that provides up to the minute information of vital interest to people who use pocket computers -- and who want to know how to better capitalize on their capabilities. We concentrate on the Sharp PC-1500 & PC-1500A and Radio Shack PC-2 & PC-3 models. But we also provide information about newcomers to the field. We report primarily on pocket and hand-held computers that are capable of executing a high level language such as BASIC. Many new models will be introduced in this year.

Especially for Busy People

This is a *newsletter*. It is not a magazine. The material we provide is condensed to 8 to 16 pages per issue. This carefully selected information is presented in an easy to digest format that is ready assimilated by busy people.

Product and Equipment Reviews

As new models and accessories become available we publish forthright reviews as reported to us by actual users. Books, software packages and other kinds of supporting materials also come under our careful scrutiny.

Important Operating Tips and Practical Advice

Every model has its strengths and weaknesses, its ins and outs. Our publication quickly compiles critical information from users and passes this on to you. We show you how to save keystrokes and maximize performance. We often uncover hidden features and are able to tell you about capabilities not discussed in the manufacturer's literature. (We have, in particular, published a wealth of material about the actual machine codes used in the PC-1500/PC-2!)

Lots of Practical Programs

We publish all kinds of practical, useful programs that enhance the use and enjoyment of your own personal unit. In past issues we have presented programs that: convert numbers from one base to another, perform linear regression analysis, plot aviation courses, solve for unknowns in triangulation problems, tally supermarket purchases, do polynomial arithmetic, display a calendar of any month over a 500 year range, perform linear interpolation, calculate amortization, figure tab locations for complex columnar reports, perform simple animation, dump memory, do curve fitting, renumber all or part of a program, and play a variety of amusing games. We are always on the lookout for the highest quality programs to bring to you.

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